



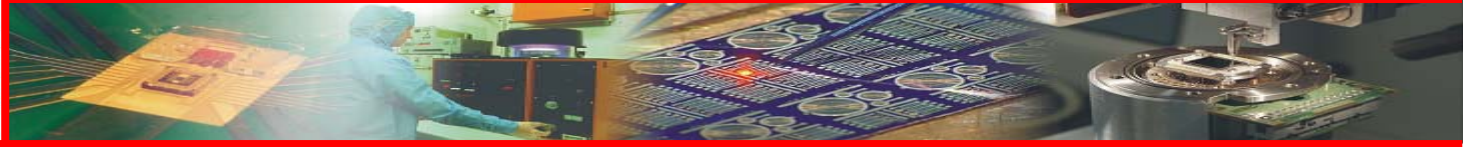
# **ACCORD** ***Advanced Components Cooperation for Optoelectronics Research and Development***

***ACCORD is an EU funded  
FP6 Specific Support Action (SSA)***





# ACCORD Introduction



**IMEC (co-ordinator)**

**B**



**EPIC**

**F**



**Multitel**

**B**



**HES-SO**

**CH**



**Wroclaw Univ. of Technology**

**P**



**Sagem Défense Sécurité**

**F**



**Scottish Optoelectronics Association SOA**

**UK**

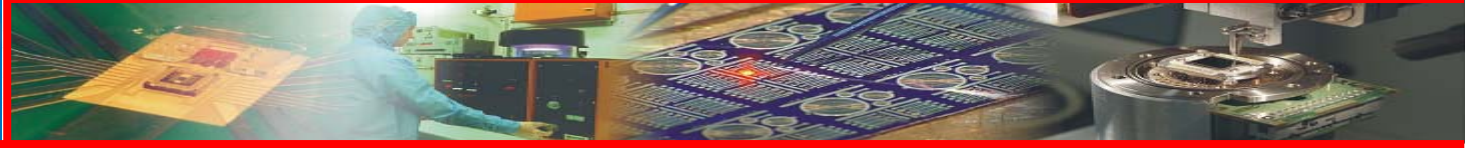


**Perfos**

**F**



# ACCORD Objectives



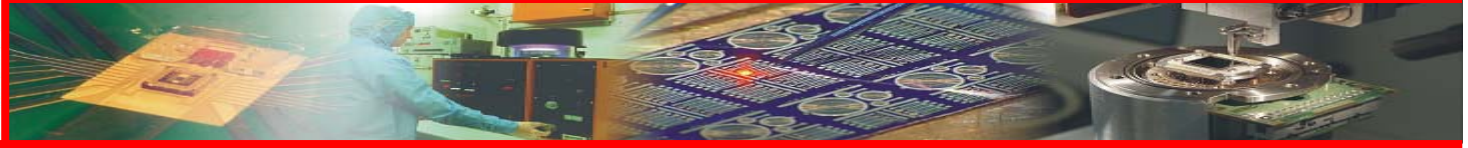
The ACCORD project has the objective

- to put **pre-competitive** photonic components and systems in the hands of researchers and students
- at **no net cost** to the university or to the company that furnishes the prototypes and
- to facilitate transfer of the university results for potential end-users especially SMEs in **new markets, new applications.**

**ACCORD runs from: 01/09/06 – 31/08/09**



## ACCORD Objectives



- On the **Operational side** the project will demonstrate, through 10 concrete examples, the positive product of enhanced R&D cooperation between industry (component suppliers & end-users) and universities in Europe.
- On the **Exploratory side**, the project will develop specific deliverables on the administrative aspects of this initiative that can be used to establish an on-going programme (such as a Europractice programme)





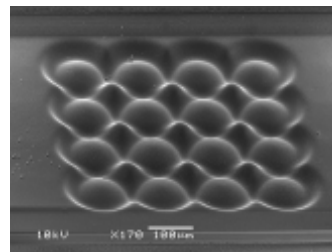
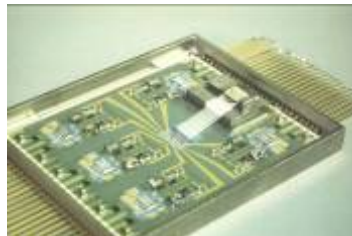
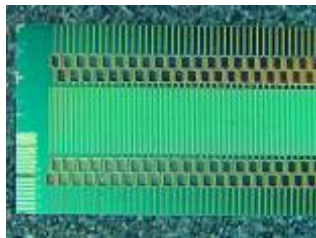
# ACCORD Scheme



ACCORD opens a call to component manufacturers

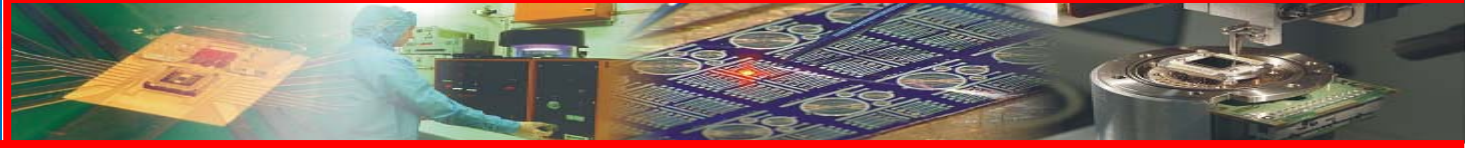


Component manufacturers respond by submitting components in area of photonics:



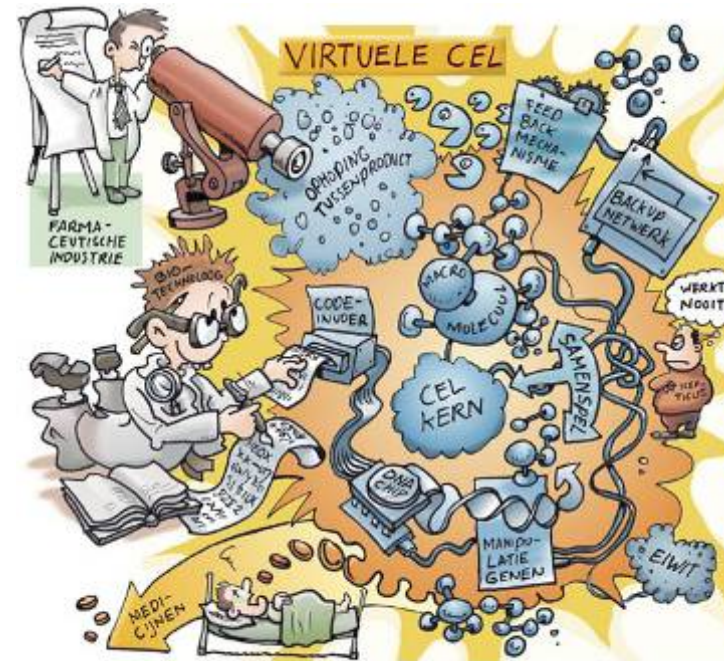


# ACCORD Scheme



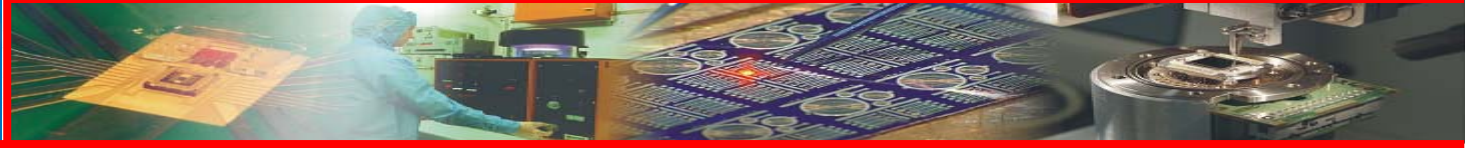
ACCORD lists components and opens a call for R&D projects

Universities respond by submitting proposals





# ACCORD Scheme



ACCORD evaluates submitted R&D proposals

- ☐ independent review committee
- ☐ based on
  - scientific value
  - new applications
  - possible involvement of end-users
  - training opportunities
  - cost for value
  - resources & expertise
- ☐ preferably no existing relation Supplier «» University





# ACCORD Scheme



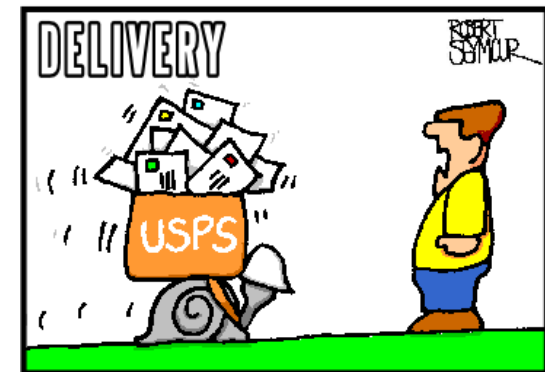
Component supplier & University come to agreement



ACCORD buys the component and delivers it to the University



Du Jour



THAT explains everything.....





# ACCORD Scheme



ACCORD follows R&D progress



R&D Projects are requested to present progress & results at

**SPIE Photonics Europe 2008**

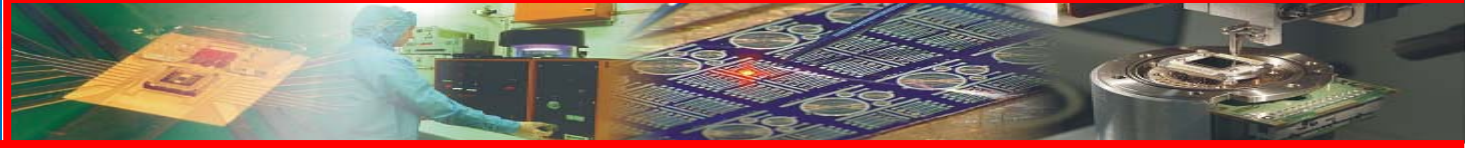


**ECOC 2008**





## Specific issues



### Specific issues

1. **ACCORD does not intervene in IPR agreement**
2. **ACCORD remains owner of component**
3. **Component supplier : EU or associated countries**
4. **R&D Projects:**
  - Only Universities
  - Only EU or associated countries
5. **Scientific publications are exclusively an affair between the company and the university**
6. **ACCORD publishes results of exchanges to the public**



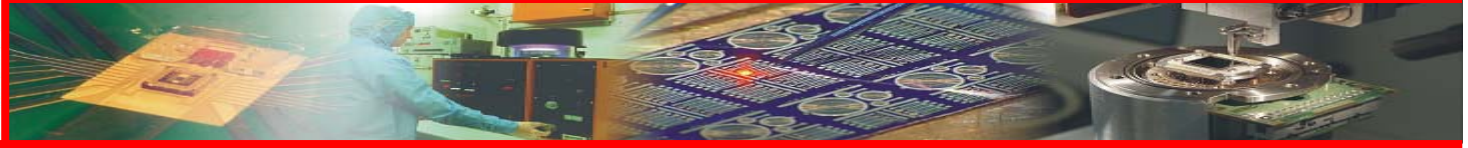
## Timeline



<b>1<sup>st</sup> Call for components</b>	<b>(22/20):</b>	<b>15/01/07 – 28/02/07</b>
<b>1<sup>st</sup> Call for R&amp;D Projects</b>	<b>(15/13):</b>	<b>12/03/07 – 13/04/07</b>
<b>Purchase of components:</b>	<b>(5):</b>	<b>01/06/07 – 31/08/07</b>
<b>Start of the projects</b>	<b>(5):</b>	<b>01/09/07</b>
<b>2<sup>nd</sup> Call fort R&amp;D Projects</b>	<b>(4/3):</b>	<b>22/10/07 – 16/11/07</b>
<b>Start of the projects</b>	<b>(1):</b>	<b>01/03/08</b>
<b>2<sup>nd</sup> Call for components</b>	<b>(15/15):</b>	<b>01/01/08 – 31/03/08</b>
<b>3<sup>rd</sup> Call fort R&amp;D Projects:</b>		<b>15/04/08 – 16/05/08</b>



## Project 1: Univ. St. Andrews (UK) & Lovalite (F)



Subject: Photoporation studies

Component: Custom Optical Fiber Face components

Contract signed: 23 September 2007

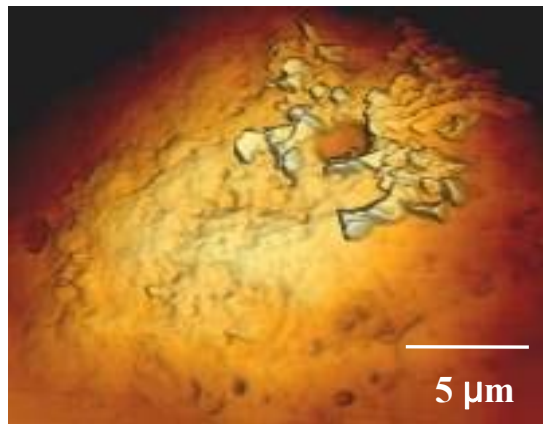




## Project 1: Univ. St. Andrews (UK) & Lovalite (F)

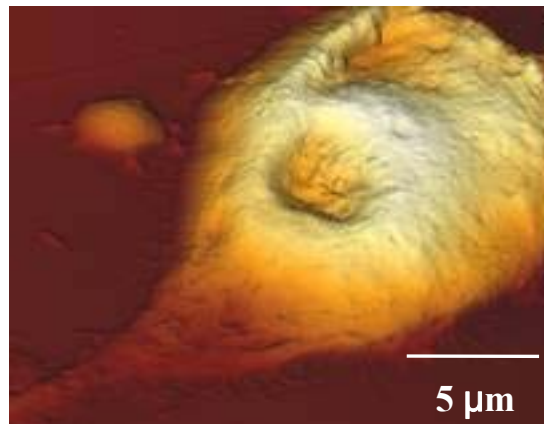


- CHO cells are fixed using formaldehyde immediately after laser treatment.
- Subsequent AFM scanning reveals pore formation on the cell membrane.



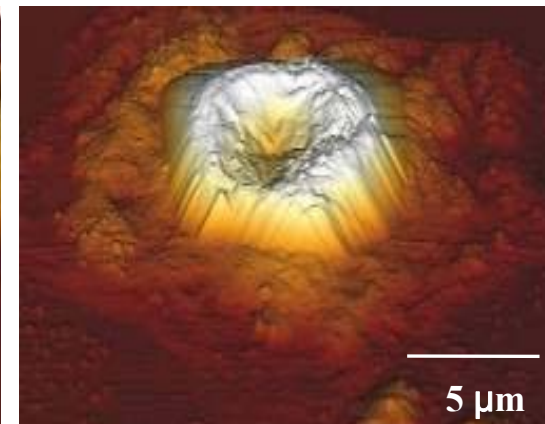
$$P_{\text{sample}} = 147 \text{ mW}$$

$$D_{\text{pore}} = 2.5 \mu\text{m}$$



$$P_{\text{sample}} = 270 \text{ mW}$$

$$D_{\text{pore}} = 4 \mu\text{m}$$



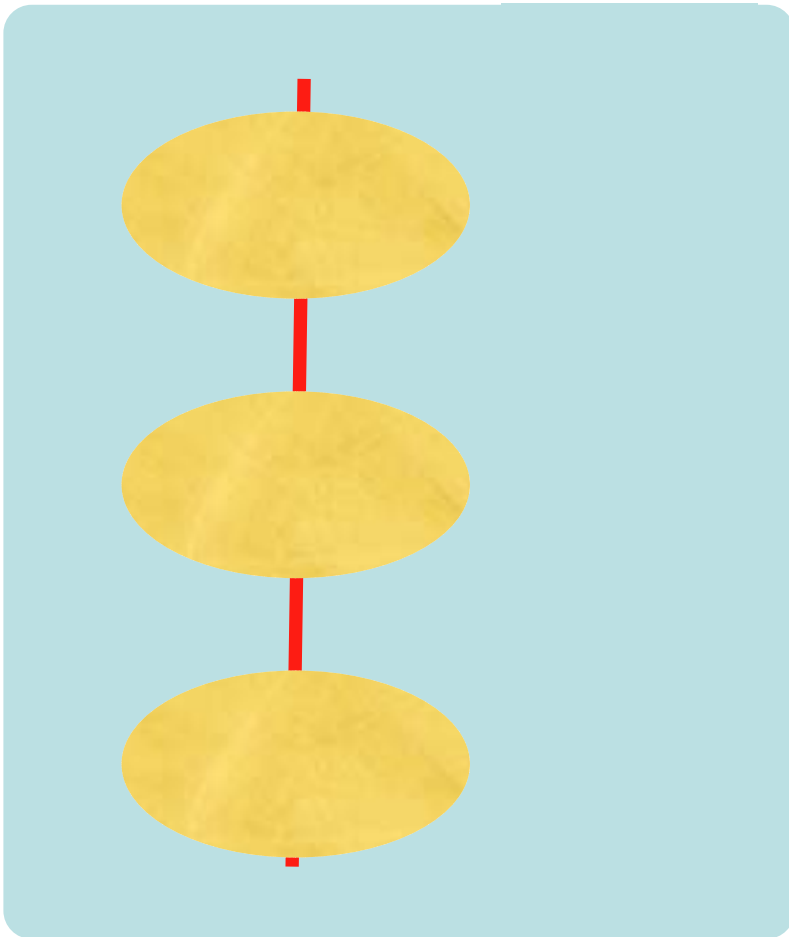
$$P_{\text{sample}} = 360 \text{ mW}$$

$$D_{\text{pore}} > 6 \mu\text{m}$$

In collaboration with Paul Prentice & Paul Campbell, Univ. of Dundee



## Project 1: Univ. St. Andrews (UK) & Lovalite (F)



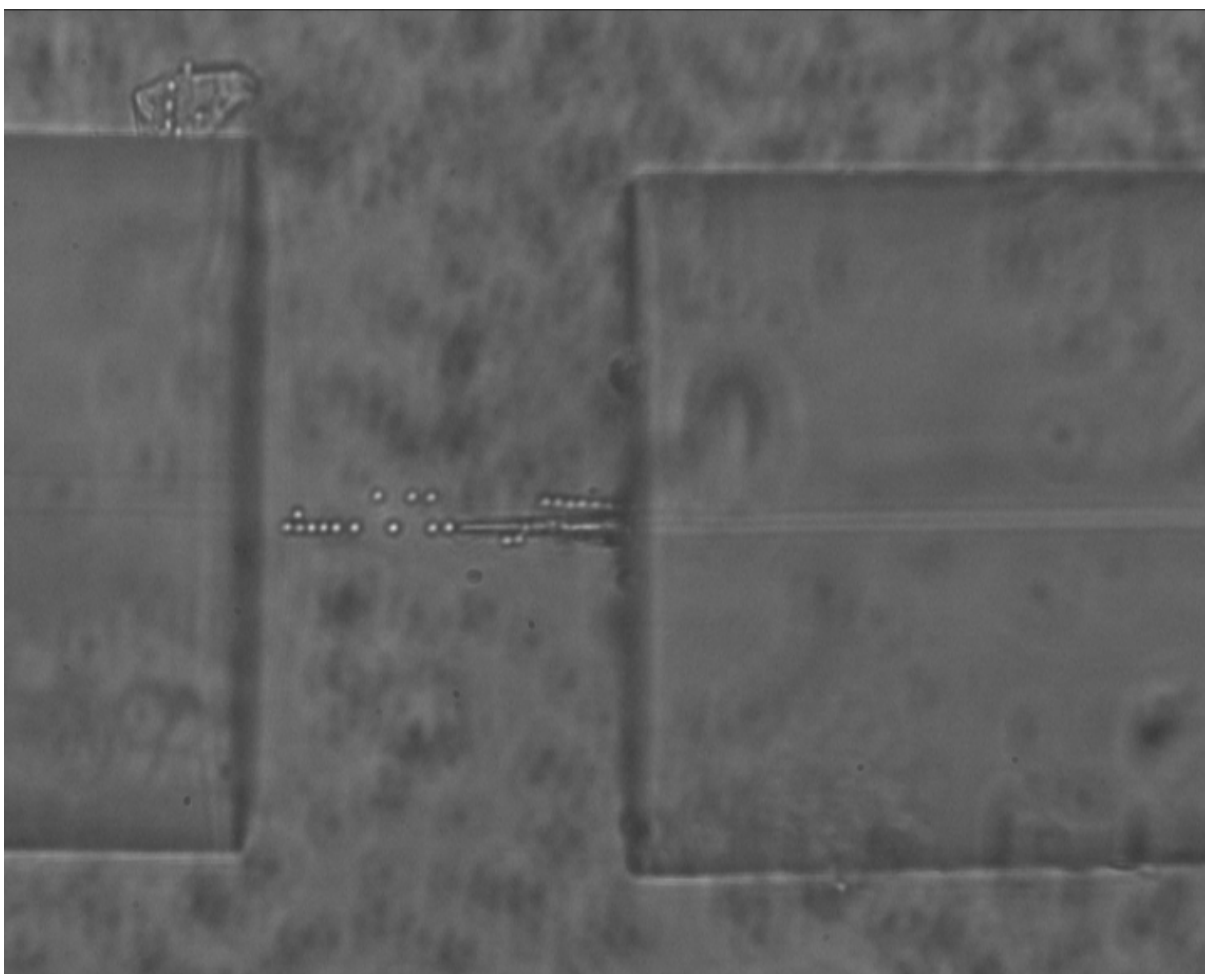
### Bessel Photoporation

*(The Optical Syringe)*

- Non-gaussian light beams behave differently.
- The bessel beam preserves a non-diffracting central core over long distances.
- Can perform fs-poration over a much greater '*depth of focus*.'
- Beam also '*self-heals*' - is this a further advantage?



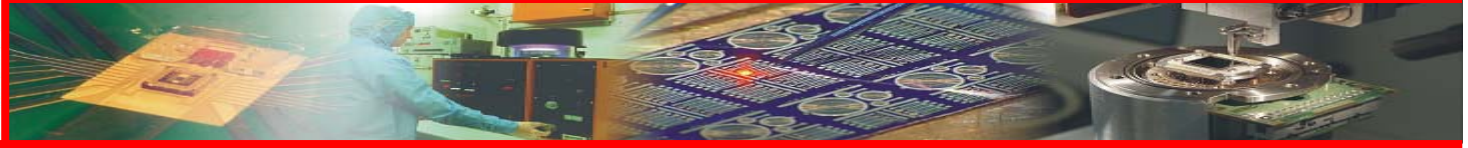
## Project 1: Univ. St. Andrews (UK) & Lovalite (F)



**Optical trapping using  
*LovaLite* Tip**



## Project 2: Tech Univ. of Tampere (SF) & EOLITE (F)



**Subject:** Micromachining of biodegradable implants and  
grooving of silicon wafers

**Component:** Short pulse laser Eolite Corus 10G

**Contract signed:** 23 October 2007





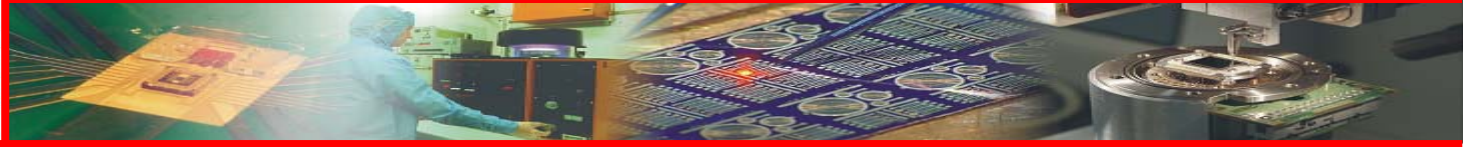
## Project 2: Tech Univ. of Tampere (SF) & EOLITE (F)



- Optimal laser micromachining parameters for:
  - I. Biomaterials
  - II. Silicon wafers (grooving & dicing process)
  - III. Sintering and ablation of printed electronic conductors
- Research focus in process speed, product quality, quality assurance and automation
- Studies with Eolite fiber laser are made in the following projects:
  - Laser based manufacturing methods for functional multi-component materials (TT, Lasermenetelmien käyttö toiminnallisten yhdistelmäateriaalien valmistuksessa)
  - Print - New manufacturing methods for traditional electronics (TEKES, Perinteisen elektroniikan uudet valmistusmenetelmät)
  - Possibly other starting projects during the year 2008



## Project 2: Tech Univ. of Tampere (SF) & EOLITE (F)



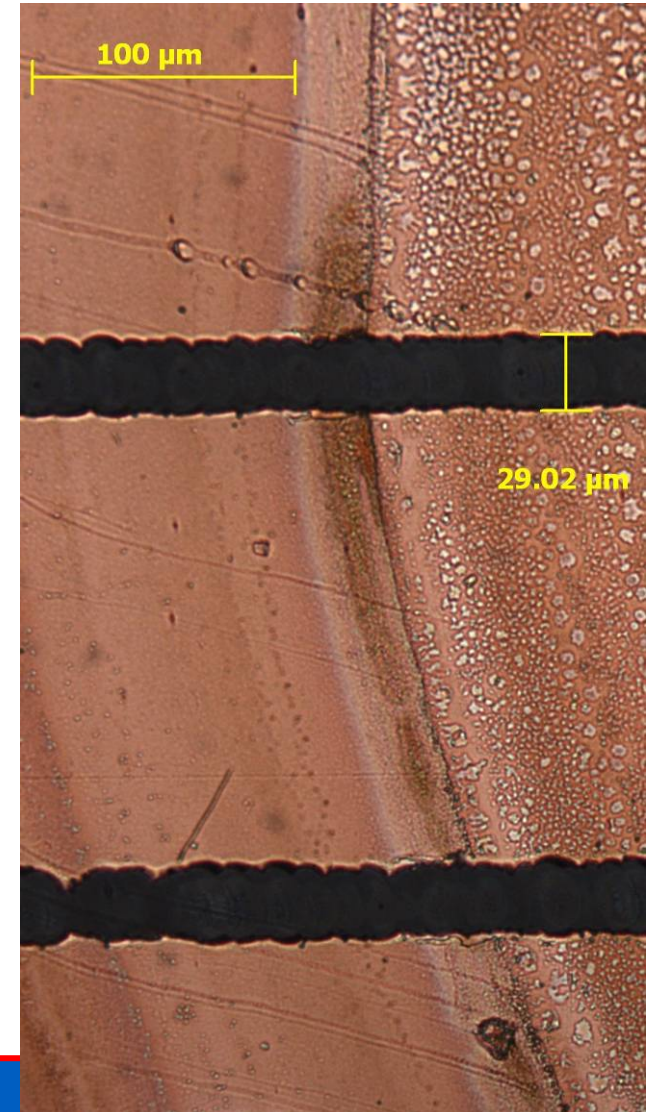
### Direct writing in copper film on PET

#### Aim

- Remove 200nm copper film braking conductivity
- No damage to PET allowed

#### Initial observations

- Very low power required, less than 0.4W
- High frequency gives best quality, 100kHz
- Feedrate up to 200mm/s
- No damage to PET





## Project 3: University of Latvia (Let) & Visionica (RUS)



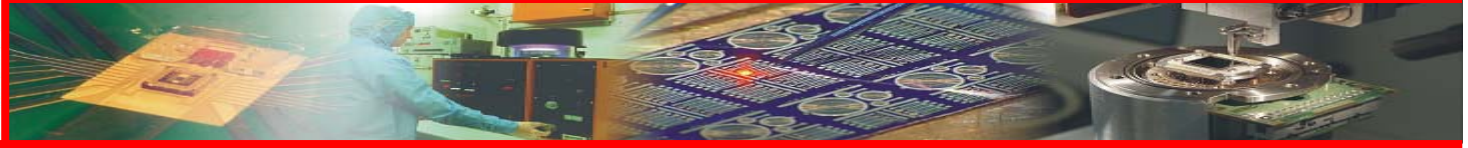
Subject: Adaptive Optics for Eye Physiology Studies

Component: Optical Wavefront Sensor

Contract signed: 7 September 2007



## Project 4: Univ. Politecnica de Madrid (E) & Fibrelogix (UK)



Subject: Testing new System Upgrade

Component: All Fibre Stripper

Contract signed: 7 November 2007





## Project 5: Univ. Politecnica de Valencia (E) & Center for Integrated Photonics (UK)



**Subject:** Characterisation of Semiconductor Optical Amplifiers and Electroabsorbers and their use in novel applications

**Component:** Semiconductor Optical Amplifiers

**Contract signed:** 9 September 2007



## Project 6: University of Strathclyde (UK) & Cascade Technologies (UK)



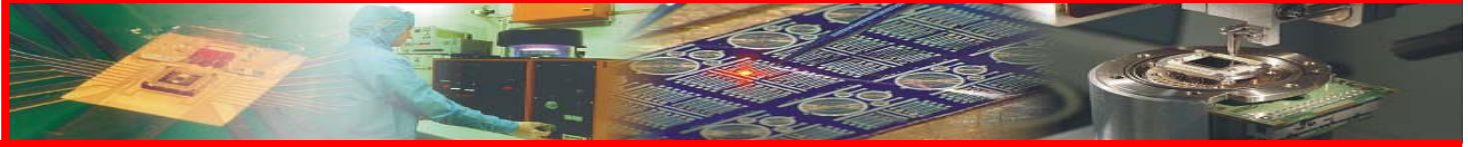
Subject: Detection of atmospheric trace gases

Component: Quantum Cascade Lasers

Contract signed: contract is under negotiation



# Overview on 2<sup>nd</sup> Call for Participation

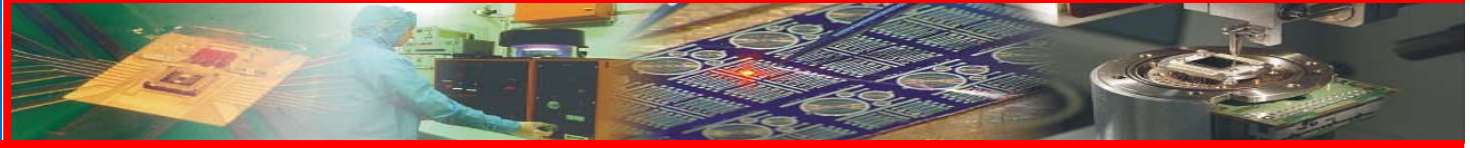


## *Call 2 – Submitted components list:*

- Ref.: [ACCORD-Call2-001](#), Low-Noise Femtosecond Laser, One-Five (Switzerland)
- Ref.: [ACCORD-Call2-002](#), Acousto-Optic Programmable Dispersive Filter (DAZZLER) for CARS time resolved vibrational spectroscopy, Fastlite (France)
- Ref.: [ACCORD-Call2-003](#), Infrared Tunable All-Solid-State-Laser, Rainbow Photonics (Switzerland)
- Ref.: [ACCORD-Call2-004](#), Elements for Conical Refraction, Conerefringent Optics (Spain)
- Ref.: [ACCORD-Call2-005](#), High Temperature Dynamic Pressure Sensor for >1000°C Applications, Oxensis (United Kingdom)
- Ref.: [ACCORD-Call2-006](#), High Power PM Fibre Coupled Isolator, Gooch & Housego (United Kingdom)
- Ref.: [ACCORD-Call2-007](#), Ultra Low Ratio Fused Fibre Tap, Gooch & Housego (United Kingdom)



# Overview on 2<sup>nd</sup> Call for Participation



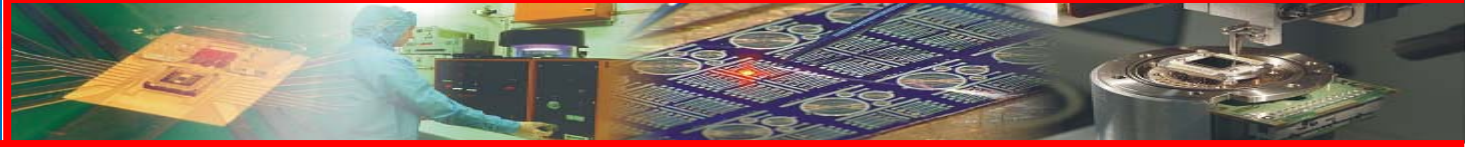
## *Call 2 – Submitted components list:*

- Ref.: [ACCORD-Call2-008](#), Photonic integrated circuits for time domain interleaving, Pirelli Labs (Italy)
- Ref.: [ACCORD-Call2-009](#), 150 to 500 mW visible DPSS lasers, Oxxius (France)
- Ref.: [ACCORD-Call2-010](#), Growth of High Performance GaN Based LEDs on ZnO Templates, Nanovation (France)
- Ref.: [ACCORD-Call2-011](#), Synchromesh SISK, Altechna (Lithuania)
- Ref.: [ACCORD-Call2-012](#), Laser diode driver LASCON, Altechna (Lithuania)
- Ref.: [ACCORD-Call2-013](#), Genetic Adaptive Optics, Imagine Optics (France)
- Ref.: [ACCORD-Call2-014](#), Optical Processing Components, CIP (United Kingdom)
- Ref.: [ACCORD-Call2-015](#), High speed semiconductor laser device platform, CST (United Kingdom)

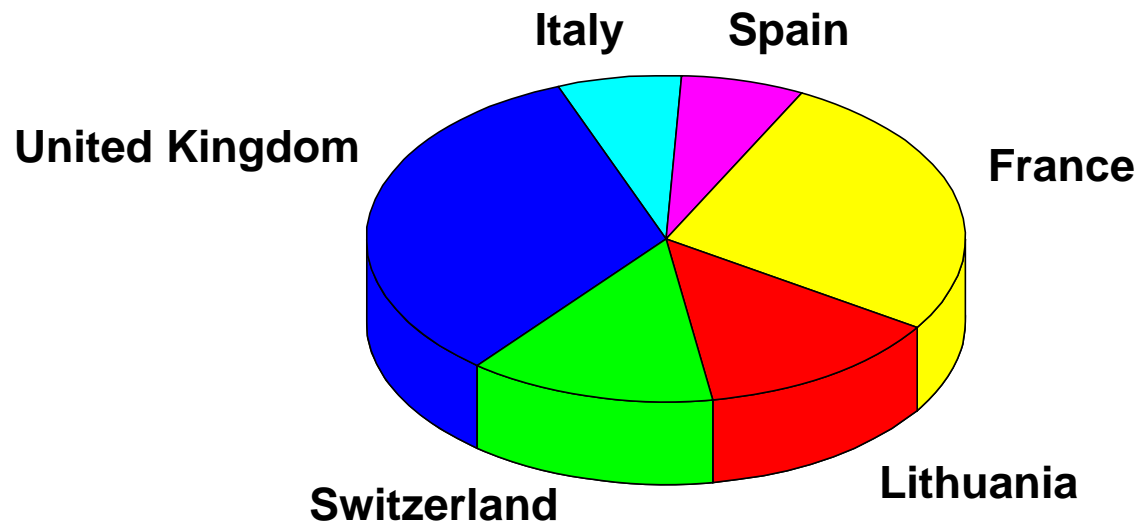




# Overview on 2<sup>nd</sup> Call for Participation



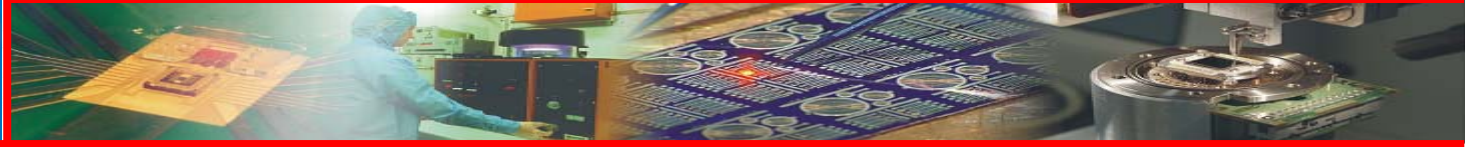
## *Geographical repartition:*



- UNITED KINGDOM: 5
- FRANCE: 4
- SWITZERLAN: 2
- LITHUANIA: 2
- ITALY: 1
- SPAIN: 1

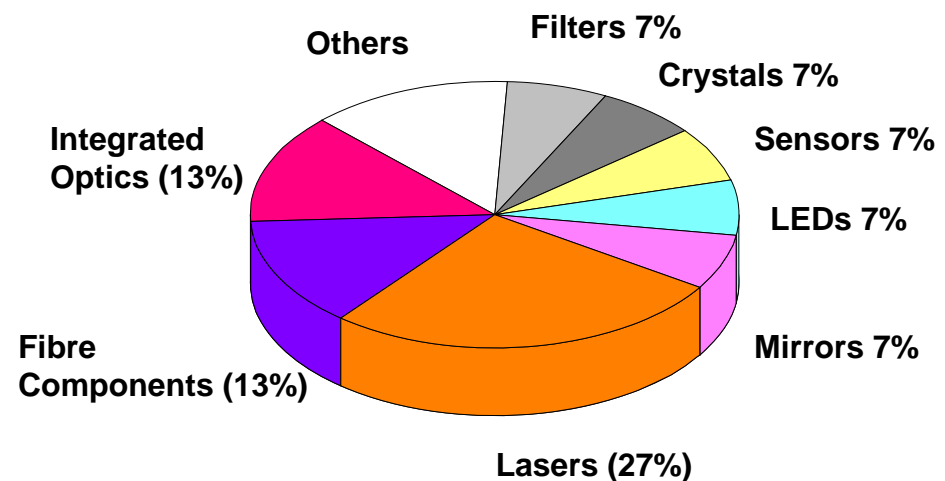


# Overview on 2<sup>nd</sup> Call for Participation



## *Devices classification:*

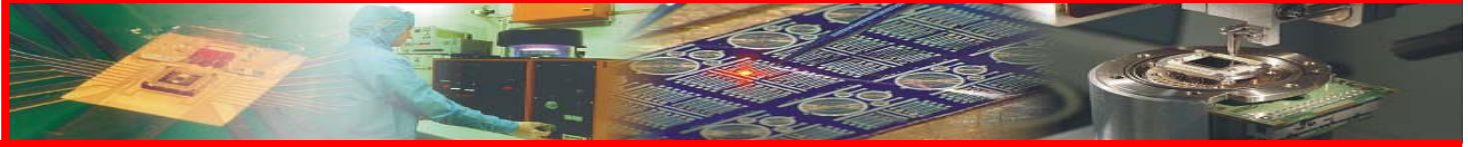
- **Lasers:** One-Five, Rainbow Photonics, Oxxius, CST
- **Filter:** Fastlite
- **Fibre Optics Components:** Gooch & Housego
- **Adjustable Mirrors:** Imagine Optics
- **LED:** Nanovation
- **Others:** Altechna



*Please register on [www.ist-accord.org](http://www.ist-accord.org) to get more information on the submitted devices*



# Communication channels

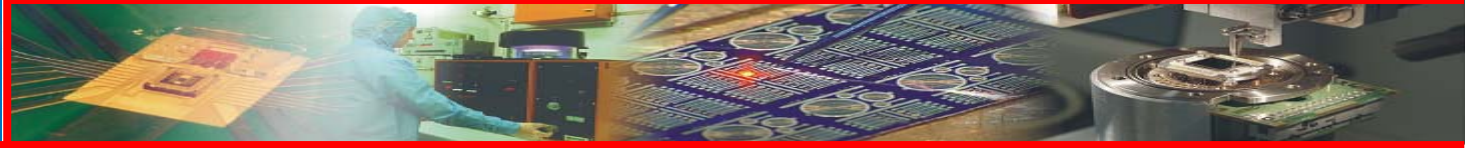


## Communicate programme to Industries & Universities:

1. Through websites & Newsletters EU-projects  
OPERA, Photonics21, MONA, NEMO, ePhotonONe, ....
2. Through Newsletters & e-mail lists O&P organizations  
EPIC, SOA, EOS, SPIE (Europe), ECOC, SAGEM press networks, IEEE regional 8 news, DLR, VDI, SFO, RNRT, COST,...
3. EC national contact points
4. EU Commission newsletters



# Communication Channels



Through interactive web site

[www.ist-accord.org](http://www.ist-accord.org)

**Home**

**Welcome to ACCORD Website**

ACCORD is the Advanced Components Cooperation for Optoelectronics Research and Development. Beginning in September 2006 and running for 3 years, ACCORD's purpose is to:

- Purchase at marginal cost pre-competitive photonic devices from innovative European companies and put them in the hands of European researchers and students, at no net cost to the university or to the company that furnished the devices and
- Facilitate transfer of device evaluation results to potential end-users, assisting companies to access new markets and new applications.

ACCORD is managed by a Consortium comprising Interuniversity Microelectronics Center, European Photonics Industry Consortium, Multitel, Haute Ecole Spécialisée de Suisse Occidentale, Wrocław University of Technology, Sagem Défense Sécurité, Scottish Optoelectronics Association and Perfos.

European companies and university researchers with an interest in either the provision or evaluation of photonic devices are invited to participate. Involvement is free of charge. Organisations wishing to participate are asked to register their interest and hence become a Member of the ACCORD Project by following the To Register link.

Registration with ACCORD allows participating Members to log-in to the Member's Area of this website which includes:

- ACCORD Member List linking to Member Profiles consisting of contact, activity and collaboration goal details of Members;
- Details of ACCORD Past Events showing Event programmes and presentation slides;
- On-line or download form facility enabling the submission of a proposal to ACCORD either to provide or evaluate a photonic device;
- Member Details update facility;
- Search Engine enabling the contents of the website to be searched.

**MEMBER LOGIN**

Username:

Password:

**ACCORD NEWS**

**11/11/2006**  
Lorem ipsum dolor sit amet, consectetur adipiscing elit.

**01/11/2006**  
Lorem ipsum dolor sit amet, consectetur adipiscing elit.

**11/10/2006**  
Lorem ipsum dolor sit amet, consectetur adipiscing elit. ...read more

**ACCORD FUTURE EVENTS**

**Lorem ipsum**  
Etiam dictum, massa nec tincidunt placerat, sapien nulle congue nisi, a sodales erat sapien non lectus

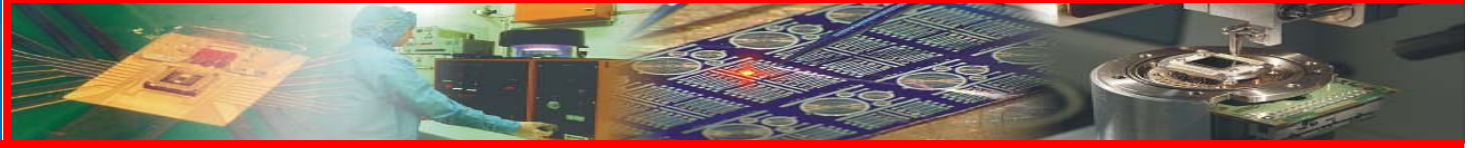
**Lorem ipsum**  
Etiam dictum, massa nec tincidunt placerat, sapien nulle congue nisi, a sodales erat sapien non lectus ...read more

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# Conclusions



1. ACCORD is an experiment!
2. Interests seem to be high
3. Challenge to set up proper “Call for ...”
4. Challenge to set up proper evaluation process
5. Challenge to spread the news